



Update on Recent RCRA Regulations for Generators and Recyclers

RCRA Inspector Workshop

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New and Emerging RCRA Regulations for Generators and Recyclers

- Definition of Solid Waste (DSW) Rule
- Cathode Ray Tubes
- Rags and Wipes
- F019 rulemaking
- Academic Laboratory Rule
- Manifest Revisions
- Generator Web-Based Reference Document



New and Emerging RCRA Regulations for Generators and Recyclers

DSW proposal and supplemental proposal

Purpose of Proposed Revisions to the Definition of Solid Waste:

- Streamline regulation of hazardous secondary materials to encourage beneficial recycling and help conserve resources
- By removing unnecessary controls, recycling these materials will not only be safe, but also easier and more cost-efficient



New and Emerging RCRA Regulations for Generators and Recyclers

DSW proposal and supplemental proposal

- Responds to court decision in *American Battery Recyclers (ABR) v. EPA*, 2000, as well as earlier court decisions
- Rule will make major revisions to the current definition of solid waste
 - Original proposal October 28, 2003
 - Supplemental proposal March 26, 2007



New and Emerging RCRA Regulations for Generators and Recyclers

DSW Proposal - Background

- Under current rules, some hazardous secondary materials that are recycled are regulated as wastes, and some aren't
- Regulation under Subtitle C can discourage recycling
 - Permits, liability, state fees, other requirements often deter companies from recycling
- Key question: Is recycling more like waste management, or normal manufacturing?



New and Emerging RCRA Regulations for Generators and Recyclers

DSW Proposal - Background

- Scope of DSW Proposal
 - Hazardous secondary materials sent for reclamation are eligible
 - Not eligible – recycled materials that are:
 - Used in a manner constituting disposal (UCD)
 - Burned for energy recovery
 - Inherently waste-like materials



New and Emerging RCRA Regulations for Generators and Recyclers

DSW Supplemental Proposal

Three major components of proposal:

- Two self-implementing conditional exclusions:
 - Materials generated and recycled under the control of the generator
 - Materials generated and transferred to another company for recycling
- One non-waste determination procedure
 - Materials that are non-wastes (determined through a petition process)
- Codification and restructuring of existing criteria for “legitimate recycling”



New and Emerging RCRA Regulations for Generators and Recyclers

DSW Supplemental Proposal

“Under the Control of the Generator” Exclusion

- Materials that are generated and recycled at the same facility
- Materials that are generated and recycled by the same company (even at different facilities)
- Materials generated and recycled under contractual arrangements (e.g., residues recycled by a tolling contractor)
- Conditions for “under the control of the generator” exclusion:
 - No speculative accumulation
 - One-time notice
 - Any storage in land-based units is contained



New and Emerging RCRA Regulations for Generators and Recyclers

DSW Supplemental Proposal

Exclusion for materials transferred to another company for recycling

- Conditions for the transfer-based recycling:
 - No speculative accumulation
 - One-time notice
 - Recordkeeping and reasonable efforts by the generator
 - Performance-based storage standard for the recycler
 - Safe management of recycling residues
 - Financial assurance by the recycler
 - Recordkeeping by the recycler



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DSW Supplemental Proposal

Non-Waste Petition Process

- Material recycled in a continuous industrial process
- Material resembling a product or intermediate
- Material recycled through contractual arrangements where the generator retains control over production and residuals
- This is intended to be an administrative procedure where petitioners submit information to show their materials are clearly not discarded per criteria set out in the regulations.



New and Emerging RCRA Regulations for Generators and Recyclers

DSW Supplemental Proposal

- Legitimacy Criteria
 - All recycling of hazardous wastes/secondary materials must be “legitimate”
 - Criteria for determining legitimacy of recycling practices are currently in guidance, preamble statements
 - States, other stakeholders have long argued for regulations
 - More transparency/certainty, easier to enforce



New and Emerging RCRA Regulations for Generators and Recyclers

DSW Supplemental Proposal

- Restructuring of the proposed legitimacy criteria:
 - Two mandatory factors
 - Materials must provide useful contribution to product or recycling process
 - Recycling must produce valuable product
 - Two factors to be considered
 - Materials must be managed as valuable commodities
 - Products of recycling must not contain significantly higher levels of hazardous constituents than are in analogous products



New and Emerging RCRA Regulations for Generators and Recyclers

DSW Supplemental Proposal

Legitimate Recycling continued

- Proposal provides more guidance on considering economics of recycling in making legitimacy determinations
- Also seeks comment on codification of the legitimacy factors



New and Emerging RCRA Regulations for Generators and Recyclers

Recycling Studies

- The supplemental proposal asks for comment on three recycling studies:
 - Environmental problems associated with recycling post-RCRA and Superfund
 - Current good practices for recycling hazardous secondary materials
 - Potential effects of market forces on hazardous recyclables



New and Emerging RCRA Regulations for Generators and Recyclers

Potential Impacts

- Approximately 4,600 facilities and 650,000 tons of hazardous waste would be affected annually, providing a cost savings of approximately \$107 million per year.
- Affected materials include 590,000 tons of material already being recycled, and 60,000 tons of new recycling



New and Emerging RCRA Regulations for Generators and Recyclers

DSW Supplemental Proposal

- **Status:**
 - Original proposal published October 28, 2003
 - Over 200 substantive comments received
 - Supplemental proposal published March 26, 2007 (72 FR 14172)
 - Original 60-day comment period extended 30 days, comments now being accepted until June 25, 2007
 - For the latest status of the rulemaking, visit the DSW rulemaking webpage at: <http://www.epa.gov/epaoswer/hazwaste/dsw/abr.htm>.
- **Contact:** Tracy Atagi – 703-308-8672



New and Emerging RCRA Regulations for Generators and Recyclers

Cathode Ray Tubes (CRTs)

- CRTs from color computer monitors and TVs are a large, expanding waste problem
- Each CRT contains several lbs of lead
- Usually are TC hazardous
- Aim of rulemaking is to encourage reuse, recycling, better management of CRTs



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CRTs - Current Regulatory Requirements

- Not currently regulated:
 - CRTs from households
 - CRTs generated by CESQGs
 - Intact CRTs sent for reuse or repair
 - Intact, off-spec CRTs sent for recycling



New and Emerging RCRA Regulations for Generators and Recyclers

CRTs (cont'd)

- Currently regulated:
 - Non-exempt CRTs sent to disposal
 - Used, broken CRTs sent for recycling



New and Emerging RCRA Regulations for Generators and Recyclers

CRTs (cont'd)

- Main elements of final rule:
 - Conditional exclusion for used, broken CRTs sent for recycling
 - Conditions:
 - Simplified packaging/labeling requirements for storage/shipment - similar to Universal Wastes
 - No speculative accumulation
 - Processors may not use temperatures high enough to volatilize lead
 - Processors must store broken CRTs indoors, or package and label them



New and Emerging RCRA Regulations for Generators and Recyclers

CRT final rule (cont'd)

- “Processed” glass
 - Recycling of CRTs usually involves first breaking, cleaning glass
- Final position: Processed glass isn't waste if it goes to lead smelter or glass-to-glass manufacturer
 - Processed glass sent to other types of recycling must be packaged and labeled



New and Emerging RCRA Regulations for Generators and Recyclers

CRT final rule (cont'd)

- **Exports**
 - Most recycling of CRTs occurs overseas (e.g., China, India), for economic reasons
 - Commenters expressed concern about CRTs being recycled abroad under unsafe conditions
 - In the final rule, EPA required notice and consent for exports



New and Emerging RCRA Regulations for Generators and Recyclers

CRTs (cont'd)

- **Status:**
 - Final rule published July 28, 2006 (71 FR 42928)
 - Website:
<http://www.epa.gov/epaoswer/hazwaste/recycle/electron/crt.htm>
 - Contact: Marilyn Goode - 703 308-8800



New and Emerging RCRA Regulations for Generators and Recyclers

Rags and Wipes - Proposed Rule

- Rags and wipes contaminated with spent solvents are often subject to hazardous waste regulations, when:
 - Spent solvent is a listed waste, or
 - Wipe exhibits hazardous characteristic
- Two major types:
 - Reusables (sent to industrial laundries for reuse)
 - Disposables



New and Emerging RCRA Regulations for Generators and Recyclers

Rags and Wipes (cont'd)

- **Current regulatory status:**
 - Disposables: Regulated as hazardous waste
 - Reusables: State determines regulatory status
- **Industry view:**
 - Lack of consistency (between states, and between disposables vs. reusables) is a problem
 - Risks don't merit Subtitle C regulation



New and Emerging RCRA Regulations for Generators and Recyclers

Rags and Wipes (cont'd)

- Main elements of proposed rule:
 - Reusables: Conditional exclusion from definition of ***solid waste***
 - Disposables: Conditional exclusion from definition of ***hazardous waste***



New and Emerging RCRA Regulations for Generators and Recyclers

Rags and Wipes (cont'd)

- Proposed Generator conditions:
 - Accumulate wipes in non-leaking, covered containers
 - Transport in containers that minimize releases to the environment
 - No free liquids in wipes or in containers when transported, except when transferred intra-company for solvent extraction



New and Emerging RCRA Regulations for Generators and Recyclers

Rags and Wipes (cont'd)

Additional proposed conditions for disposables

- Wipes must contain no more than 5g of solvent, or must be treated via solvent extraction
- Can't contain these solvents:
 - 2-nitropropane, nitrobenzene, methyl ethyl ketone (MEK), methylene chloride, pyridine, benzene, cresols (o,m,p), carbon tetrachloride, chlorobenzene, tetrachloroethylene, trichloroethylene



New and Emerging RCRA Regulations for Generators and Recyclers

Rags and Wipes (cont'd)

- Proposed Handling facility conditions for both types of wipes
 - Manage wipes in containers that meet generator conditions
 - If containers contain free liquids:
 - Return to generator, or
 - Manage as hazardous waste



New and Emerging RCRA Regulations for Generators and Recyclers

Rags and Wipes (cont'd)

- Summary of comments
 - Many from makers of disposable wipes
 - In favor of rule with some changes for the laundries (their competitors)
 - Some from generators, mostly in favor
 - At least 2 “campaigns” against rule by enviros/unions (4000+ form letters)
 - Several states, support mixed
 - Numerous comments on the risk screening



New and Emerging RCRA Regulations for Generators and Recyclers

Rags and Wipes (cont'd)

- Proposed rule published November 20, 2003
- Comment period closed April 9, 2004
- Public hearing held March 9, 2004
- Risk analysis currently being revised; once completed, it will be peer reviewed
- Schedule for final rule is dependent on the outcome of the peer review
- Contact: Teena Wooten – 703-308-8751



New and Emerging RCRA Regulations for Generators and Recyclers

F019 Listing Amendments

- EPA proposed amendments to the F019 listing (wastewater treatment sludges from the chemical conversion of aluminum, except from zirconium phosphating in aluminum can washing when that is the exclusive conversion coating process)
- Amending the listing will encourage the use of aluminum parts in motor vehicles, which will decrease air emissions and increase gas mileage



New and Emerging RCRA Regulations for Generators and Recyclers

F019 Amendments cont'd.

- The proposal amends the listing to exempt treated wastewaters generated during the motor vehicle assembly process
- The sludges generated from these processes will be exempt from RCRA Subtitle C if they are disposed of in landfill units that meet specific liner criteria
- EPA used risk assessment tools to determine this practice will not present a risk to human health and the environment



New and Emerging RCRA Regulations for Generators and Recyclers

F019 Amendments cont'd.

- By proposing to reduce the regulatory burden related to managing these wastewater treatment sludges as hazardous wastes, the Agency intends to provide motor vehicle manufacturers with more incentive to use aluminum parts when assembling automobiles, light trucks and utility vehicles
- Since aluminum parts are lighter than heavier iron or steel parts, vehicles made with more aluminum parts are capable of increased gas mileage and decreased exhaust air emissions



New and Emerging RCRA Regulations for Generators and Recyclers

F019 Amendments cont'd.

Next steps in the Rulemaking Process

- Proposed rulemaking published on January 18, 2007 (72 FR 2219)
- Comment period closed March 19, 2007
- Commenters included: States (MI, TX, OH); automobile manufacturing industry; automotive parts industry; aluminum industry; waste treatment associations; and aerospace industry
- All commenters generally supported the proposed exemption; however, the commenters differed on the types of management conditions, if any, that are needed. Some commenters also suggested that F019 waste from manufacturing other vehicles and industries be included in the exemption.
- Contact: Jim Michael, 703-308-8610



New and Emerging RCRA Regulations for Generators and Recyclers

Academic Laboratory Rule – History

- 1989 study and Report to Congress on challenges faced by academic laboratories
- 1999 XL Project – 3 Universities piloted
- 2001 Howard Hughes Medical Institute Pilot Project – 10 major research institutions
- 2002 Report to Congress
- 2003 public meetings
- 2006 proposed rule (May 23, 2006; 71 FR 29712)



New and Emerging RCRA Regulations for Generators and Recyclers

Academic Laboratory rule: Background

Challenges faced by college and university laboratories in managing their hazardous wastes:

- Practices differ from those of industrial generators:
 - Large number of points of generation
 - Highly variable waste streams
 - Transient student population
 - Decentralized management of labs across campus



New and Emerging RCRA Regulations for Generators and Recyclers

Proposed Academic Laboratory rule

- New regulations for managing hazardous waste in laboratories at colleges and universities (C/Us) proposed May 23, 2006
- Rule is optional. College and university laboratories can choose to be regulated under either
 - Existing satellite area regulations; or
 - Proposed academic laboratories rule (proposed new Subpart K of Part 262)



New and Emerging RCRA Regulations for Generators and Recyclers

Academic Laboratory proposed rule cont'd.

- C/Us can choose where to make hazardous waste determination
 - In the laboratory (before removal), or
 - Within 4 days of arrival, at either a
 - on-site central accumulation area, or
 - on-site TSDF
- Increased flexibility for removing “unwanted materials” from the laboratory:
 - Time-driven (primary):
 - Must remove all unwanted materials from lab on a regular schedule not to exceed 6 months
 - Volume-driven (secondary):
 - If lab exceeds 55 gallons, must remove within 10 calendar days
- Special limits for “reactive acutely hazardous unwanted materials”
 - 6 “P-list” chemicals that are reactive (e.g., ammonium picrate)
 - Time-driven: same (i.e., maximum 6 months)
 - Volume-driven:
 - If lab exceeds 1 quart, must remove within 10 calendar days



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Academic Laboratory proposed rule

- **Laboratory Management Plan (LMP)**
 - Describes **HOW** a facility will comply with performance based standards (see next slide)
 - **9** mandatory elements of the plan
 - Two options co-proposed for enforceability of elements of plan (provided performance based standards still met)
 - Compliance with elements of LMP enforceable
 - LMP not enforceable



New and Emerging RCRA Regulations for Generators and Recyclers

Academic Laboratory proposed rule cont'd.

- Performance-based standards for:
 - Container labeling
 - Container management
 - Training for laboratory workers
 - Instruction for students
- Laboratory clean-outs
 - Not mandatory, but can be done at any point
 - Encouraged through incentives offered *one time per lab per year*:
 - 30 days allowed to conduct clean-out
 - Facility does not have to count clean-out waste in determining generator status



New and Emerging RCRA Regulations for Generators and Recyclers

Academic Laboratory proposed rule cont'd.

Issues EPA solicited comment on in the proposal:

- Allowing CESQGs to opt in
- Creating a new “working container” in the lab
- Creating a new “Consolidation Area” or “Super Satellite Area”
 - After satellite accumulation area
 - Before 90/180 central accumulation area



New and Emerging RCRA Regulations for Generators and Recyclers

Academic Laboratory rule cont'd.

- Next steps in the rulemaking process
 - Proposed rule published May 23, 2006
 - Over 100 comments received
 - 66 individual colleges and universities
 - 17 states/state associations
 - 13 trade associations
 - Currently evaluating comments and reconvening workgroup
- OSW Labs Team
 - For more information, see EPA's website:
<http://www.epa.gov/epaoswer/osw/specials/labwaste/index.html>
 - Contact Trisha Mercer, 703-308-8408



New and Emerging RCRA Regulations for Generators and Recyclers

Manifest Revisions

- Manifests are key element of RCRA's "cradle to grave" regulatory system
- But, some fixes were needed:
 - Inconsistent state requirements
 - Paper-based system is inefficient, costly
 - Not integrated with BRS reporting system
 - Real time tracking of shipments isn't feasible



New and Emerging RCRA Regulations for Generators and Recyclers

Manifest Revisions

- Proposed rule published May 22, 2001
- Two main elements:
 - Form revisions
 - Aim is national consistency, providing more useful information to regulators
 - Electronic manifests
 - Switch from paper-based system to e-manifests



New and Emerging RCRA Regulations for Generators and Recyclers

Manifest Revisions

- Decision was made to separate the revisions into two rules so form revisions were finalized first, e-manifests are on separate track
- Manifest Form Revisions Final Rule published March 4, 2005 (70 FR 10776)
- E-manifest provisions more controversial, pose technical and budget issues
 - Electronic signatures
 - System security
 - Centralized or decentralized system
 - Need for new appropriations or user fee authority to fund e-manifest



New and Emerging RCRA Regulations for Generators and Recyclers

Manifest Revisions Highlights

- Fully standardized manifest form
- New acquisition process with EPA registry and precise printing specifications
- Mandatory identification of waste and handling codes
- New fields for more precise tracking of rejected wastes, residues, and import/exports



New and Emerging RCRA Regulations for Generators and Recyclers

Manifest Revisions (cont'd)

- Sample forms are reviewed for compliance with specs., legibility, durability, & uniqueness of tracking #s
 - Over 40 printers have applied to EPA as of 4/26/07
 - Eleven vendors are approved and others are in the application process
 - More than enough registered printers by the 9/06/06 transition date so shortages were not an issue



New and Emerging RCRA Regulations for Generators and Recyclers

Manifest Revisions (cont'd)

- Effective Date of Forms Rule:
 - Final rule published March 4, 2005
 - 18 month phase-in period
 - September 5, 2006 – date new forms required to be used
 - For more information:
<http://www.epa.gov/epaoswer/hazwaste/gener/manifest/registry/index.htm>
 - Currently working on interpretive and implementation issues with new form, especially with rejected waste and waste code issues
 - Some of these issues will require a regulatory correction notice



New and Emerging RCRA Regulations for Generators and Recyclers

E-Manifest Revisions

- Final rule for E-manifests is being worked on
- Key component of our ongoing campaign to reform the manifest system
 - Paper Manifest imposes big burden: ~\$200-500 Million/yr
 - Form Revisions Rule was important 1st step toward E-Manifest
 - Econ. estimates project E-Manifest may generate \$75 - \$97 Million in annual net benefits



New and Emerging RCRA Regulations for Generators and Recyclers

E-Manifest Revisions cont'd.

- E-Manifest Stakeholder Input - Conducted national stakeholder meeting – May 2004
 - OSW presented a straw approach with a centralized web-based tracking application hosted on EPA's Central Data Exchange
- Key Messages from Stakeholder Meeting:
 - Strong consensus for consistent, national system
 - Sense that E-Manifest should be optional
 - Keep it simple
 - User consensus is cost should not be big barrier
 - Users willing to pay fees to finance system build and O&M
 - Fees OK if transparent and earmarked to manifest (not a “tax”)
 - IT vendor consensus that manifest could be attractive investment if service fees could be used for cost recovery



New and Emerging RCRA Regulations for Generators and Recyclers

E-Manifest Revisions cont'd.

- Notice published in April 2006 to solicit comment on recommendation for a national system
 - Strong support for national system funded by user fees, if use is voluntary for the regulated community
- We know that there has been interest in both the House and Senate in enacting legislation that would authorize a national E-manifest system but not sure whether it will emerge this year
- “2006 E-Manifest Establishment Act” was introduced in 109th Congress
 - Would authorize EPA to collect and retain user fees to fund system costs
 - Would authorize EPA to enter into performance-based contract with IT vendor
 - Would prescribe a uniform effective date/implementation in all States



New and Emerging RCRA Regulations for Generators and Recyclers

E-Manifest Revisions cont'd.

- There are funding constraints
- We can recommend a national E-manifest only if we can find means to make it “self-sustaining”
 - Fee-based approach appears sensible, as users are the main beneficiaries and “net benefits” are substantial
- If E-manifest legislation passes in 2007, EPA can move forward with regulations and procurement actions
 - Regulation: Would amend RCRA manifest regulations to authorize use of e-manifests as legally valid substitute for forms, final rule possible in March 2008 (at the earliest)
 - Procurement: Would award IT vendor contract to build and operate an e-manifest system funded by user fees.
- Contact: Rich Lashier 703 308-8796



New and Emerging RCRA Regulations for Generators and Recyclers

Web-Based Generator Reference Document

- A user-friendly guide to the RCRA hazardous waste generator regulations
 - Addresses commenters' concerns over the difficulty in understanding RCRA requirements
 - Uses actual regulatory text
 - Organizes requirements by generator status and by regulatory requirement



New and Emerging RCRA Regulations for Generators and Recyclers

Web-Based Generator Reference Document, cont'd.

- Additionally, the reference document:
 - Provides hyperlinks to relevant RCRA Online documents such as FAQs, guidance memos and letters, associated with each regulatory requirement
 - Links internally within the regulations where there are cross-references, eliminating the need to page through a Federal Register



New and Emerging RCRA Regulations for Generators and Recyclers

Generator Web-based Document

- **Website:**

http://www.epa.gov/epaoswer/osw/gen_trans/tool.pdf

- **Contacts:**

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- Meg McCarthy: 703-308-8653;
mccarthy.meg@epa.gov